



the i2 high technology computers and electronics solution

i2 Technologies is dedicated to providing the computers and electronics industry with best-in-class RHYTHM solutions specifically designed to increase customer service levels, reduce supply chain costs, increase global visibility and increase agility within your company and across all trading partners in the extended enterprise.

High Technology, Computers and Electronics is a broad industry category that covers a wide range of market segments. Each share common challenges, however, such as the need to increase market share, decrease inventory levels, the ability to deliver mass customized products, and support global markets.

Some of these important market segments include the following:

- Computer systems
- Contract Manufacturers
- Storage devices and media
- Networking equipment
- Telecommunications equipment
- Consumer electronics
- Medical equipment
- Test and measurement devices
- Information technology distributors and resellers

High Technology companies create competitive advantage and shareholder value by delivering the right product, at the right time, and at the right price. In the world of "build-to-order," where products are designed and made based on market pull, or real-time customer demand, a company must transform itself into a high-velocity enterprise that can respond to customer demand and leverage the explosion of electronic business.

With i2's RHYTHM solutions for electronic Business Process Optimization (eBPO), your company and its business partners can increase customer service levels and reduce inventory through improved visibility, decision support and collaborative supply chain management.

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High Technology Computers and Electronics Challenges

High Technology Computers and Electronics manufacturers have increasingly found themselves squeezed by aggressive price competition, increased product standardization, rapid technological change, and rising customer demands. These pressures have created significant profit margin erosion, rapid depreciation of inventory assets, and shortened product life cycles. As a result, the critical success factors in these industries have evolved from technology innovation and business strategy to include operational excellence.

The primary drivers to operational excellence in high technology electronics manufacturing are the need to minimize inventory on the one hand, while at the same time maintaining sufficient inventory of the "right" product in order to maximize market share.

- **The Age of Inventory.** Rapid price erosion of hardware components means that in 1998 electronics manufacturers could count on up to 2% per week reduction in inventory value. In fact, Dataquest recently estimated that 2 weeks of channel inventory is equivalent to 3% of profit for computer-related components. This represents significant liability for an industry that commonly holds 45 days of inventory.
- **The Market Share Game.** At the same time, however, electronics manufacturers need to maintain enough inventory of the right product configuration or risk losing market share. A recent study by McKinsey & Co reveals that market share losses in the electronics industry can be permanent. The study further indicates that market share is lost in the most casual of ways: a purchase order arrives for a specific configuration of product, which is not available, and the order ships as a partial shipment. Repeated several times with the same customer, an electronics manufacturer can lose that customer to a competitor permanently.
- **Increasing Customer Demands.** The market share game has encouraged large and small customers to demand increasingly customized products, services and financial relationships. While hardware cost represents just 15% of the total spending on information technology solutions, it is the most rapidly depreciating part of the equation, and hardware replacement drives many of the expenses in the information technology solution. As a result, some high technology customers are adopting procurement strategies designed to lengthen the total time between upgrades:
 - **Standardization.** Increasing standardization and inter-changeability of technology components reduces risk during transitions.
 - **Start of Life Cycle Acquisition.** Purchasing products at the start of a life cycle is a strategy to maximize the time between required upgrades.
 - **Product Life Cycles Linked to Technology.** There is no value in buying a new product if it is based on technology that is at the end of its own life cycle.
- **Increased Globalization.** The market share game has motivated electronics manufacturers to attack the global marketplace. This in turn has dramatically increased the operational complexity of end-to-end supply chains, as well as the variability in demand management.
- **Explosion of Electronic Business.** The market share game has also spurred electronics manufacturers to adopt electronic business solutions that help them break away from traditional distribution models that emphasized multiple tiers of distribution with high levels of inventory towards complementary direct sales and direct fulfillment strategies which reduce inventory levels and maximize customer intimacy. In order to manage the conflicting imperatives to minimize inventory, increase market share, deliver mass customized products, support global markets and leverage electronic business, High Technology Computers and Electronic companies need the tools and disciplines to establish the following high-velocity business processes:
 - **Inventory Lean End-To-End Supply Chain.** As customer information is propagated quickly through to the raw-materials level, the need for large quantities of inventory and

safety stock along the supply chain is eliminated.

- **High Velocity End-To-End Supply Chain Planning and Execution.** With superior planning and execution capabilities the product flow from raw-material supplier all the way to the end customer is more efficient. This reduces the "touch time" of the product and minimizes the time products need to stay in inventory.
- **Reduced Depreciation Exposure.** Products that are already ordered at fixed price face limited depreciation risk en-route from raw materials into the customer's possession. The later components are purchased, the greater the opportunity to take advantage of component price reductions.
- **Reduced Exposure to Demand Volatility.** As products proliferate, the reliability of forecasting at the finished good level declines rapidly and the total level of inventory required to maintain service levels starts to increase exponentially. Avoiding finished goods inventories allows manufacturers to maintain service reliability without prohibitive inventory levels and the risks associated with them.
- **Faster Product Transitions.** Without finished goods to clog the supply chain, new products reach customers with less delay.
- **Integrated Customer Facing and Supply Chain Capabilities.** The explosion of electronic business solutions is allowing enterprises to increase customer responsiveness significantly. However, if the enterprises's customer facing business processes are not tightly integrated to its supply chain capabilities, then the impact of electronic business is to increase the speed of decision making.

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Roles in High Technology Computers and Electronics

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- **Component Manufacturer.** These manufacturers produce major standard off-the-shelf components to the computer, networking, telecommunications and electronics assemblers such as hard disk drives, removable media devices, memory modules, and power supplies. i2's eBPO solution can help these enterprises manage product transitions more effectively, reduce planning cycle times, reduce inventory and increase customer service levels.
- **Electronics Assembler.** These manufacturers produce customer-ready electronics products such as computers, and data networking systems such as routers, bridges and hubs. The majority of these manufacturers procure a range of standard off-the-shelf components and semi-custom subsystems from component manufacturers and contract manufacturers respectively. i2's eBPO solution can help these enterprises manage product lifecycles more effectively, increase market share through improved customer commitment process and service management, and achieve sustainable cost reductions through reduced inventory and planning cycle time.
- **Contract Manufacturer.** These manufacturers produce major semi-custom components to the computer, networking, telecommunications and electronics assemblers such as computer motherboards, and large integrated printed circuit boards for networking and telecommunications products. i2's eBPO solution can help these enterprises reduce planning cycle times, reduce inventory and increase customer service levels.
- **Contract Manufacturer.** These manufacturers produce major semi-custom components to the computer, networking, telecommunications and electronics assemblers such as computer motherboards, and large integrated printed circuit boards for networking and telecommunications products. i2's eBPO solution can help these enterprises reduce planning cycle times, reduce inventory and increase customer service levels.
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